



2SD1710C — NPN Triple Diffused Planar Silicon Transistor

500V / 7A Switching Regulator Applications

Features

- High breakdown voltage, high reliability.
- Fast switching speed.
- Wide ASO.
- Adoption of MBIT process.
- Micaless package facilitating mounting.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V _{CB0}		900	V
Collector-to-Emitter Voltage	V _{CEO}		500	V
Emitter-to-Base Voltage	V _{EBO}		7	V
Collector Current	I _C		7	A
Collector Current (Pulse)	I _{CP}	PW≤300μs, duty cycle≤10%	14	A
Base Current	I _B		3	A
Collector Dissipation	P _C		3	W
		T _C =25°C	45	W
Junction Temperature	T _J		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I _{CB0}	V _{CB} =500V, I _E =0A			10	μA
Emitter Cutoff Current	I _{EBO}	V _{EB} =5V, I _C =0A			10	μA

Continued on next page.

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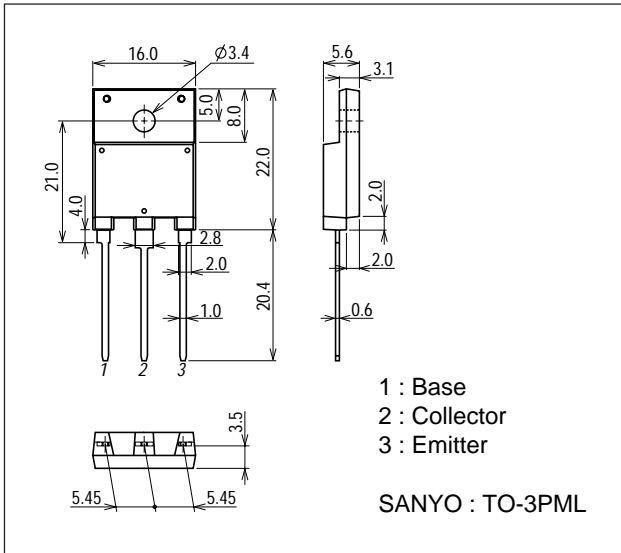
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
DC Current Gain	h_{FE1}	$V_{CE}=5V, I_C=0.6A$	20		50	
	h_{FE2}	$V_{CE}=5V, I_C=3A$	8			
Gain-Bandwidth Product	f_T	$V_{CE}=10V, I_C=0.6A$		18		MHz
Output Capacitance	C_{ob}	$V_{CB}=10V, f=1MHz$		80		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=3A, I_B=0.6A$			1	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=3A, I_B=0.6A$			1.5	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=1mA, I_E=0A$	900			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=5mA, R_{BE}=\infty$	500			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=1mA, I_C=0A$	7			V
Collector-to-Emitter Sustain Voltage	$V_{CEX(sus)}$	$I_C=2.5A, I_{B1}=-I_{B2}=1A, L=1mH, \text{Clamped}$	500			V
Turn-ON Time	t_{on}	$V_{CC}=200V, 5I_{B1}=-2.5I_{B2}=I_C=4A, R_L=50\Omega$			0.5	μs
Storage Time	t_{stg}	$V_{CC}=200V, 5I_{B1}=-2.5I_{B2}=I_C=4A, R_L=50\Omega$			3.0	μs
Fall Time	t_f	$V_{CC}=200V, 5I_{B1}=-2.5I_{B2}=I_C=4A, R_L=50\Omega$			0.3	μs

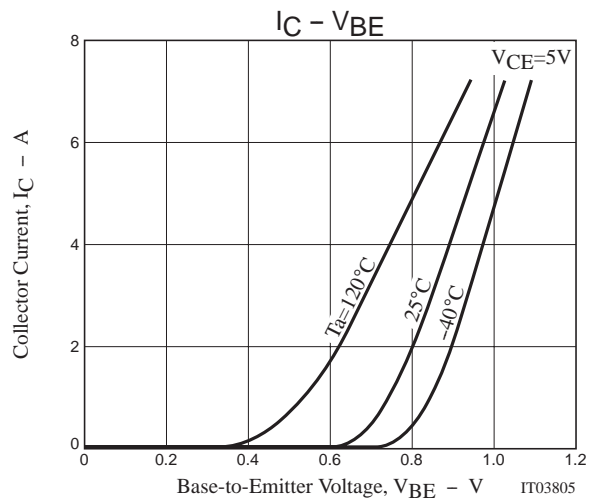
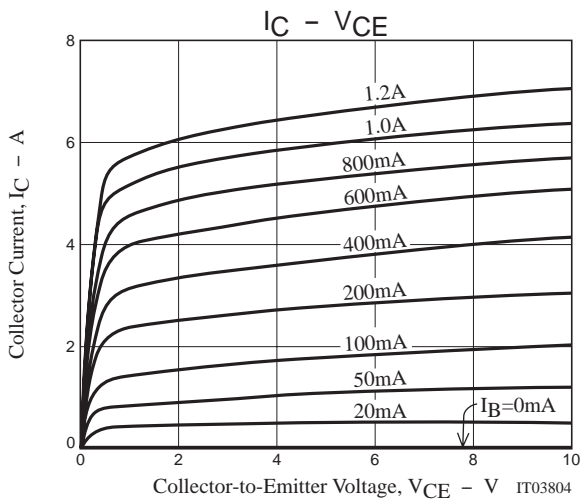
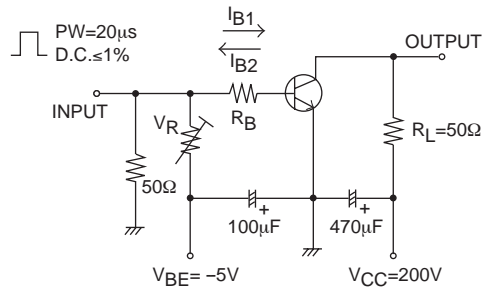
Package Dimensions

unit : mm (typ)

7502-002

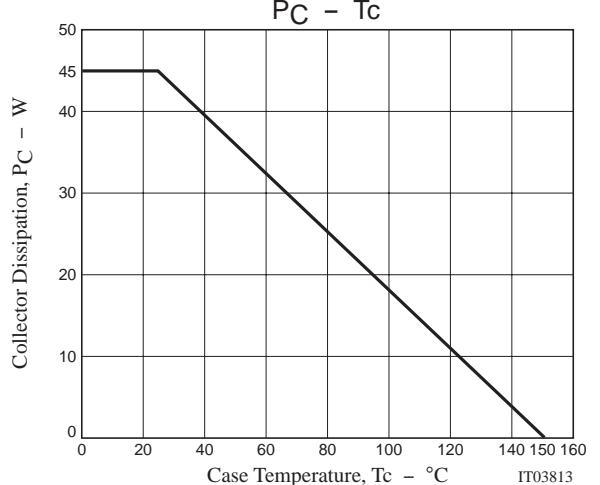
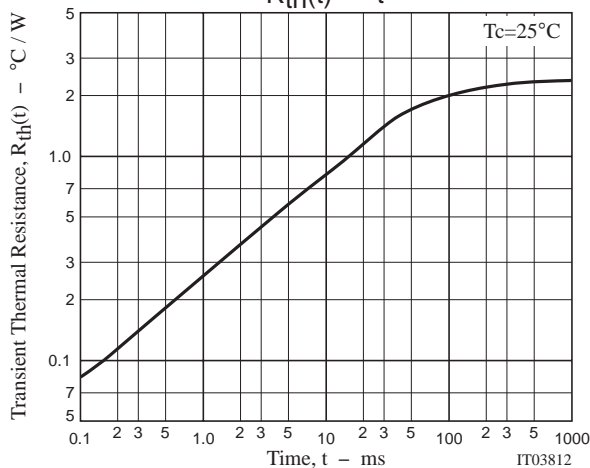
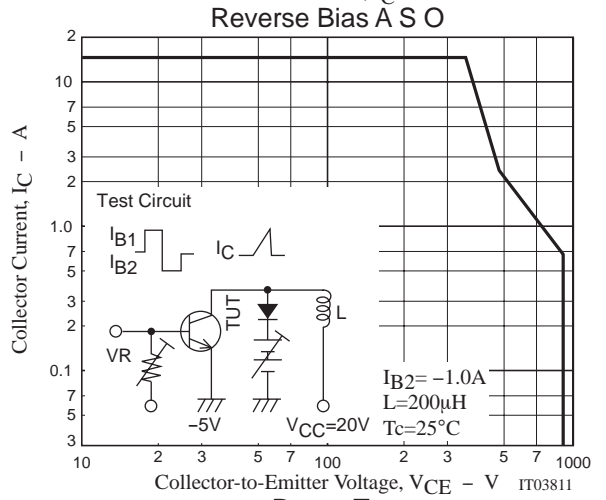
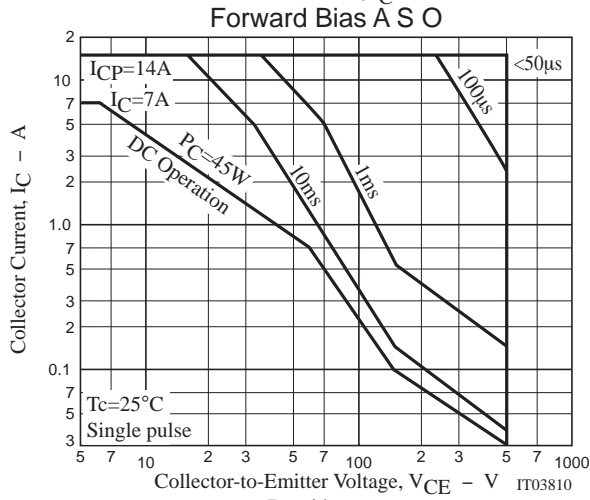
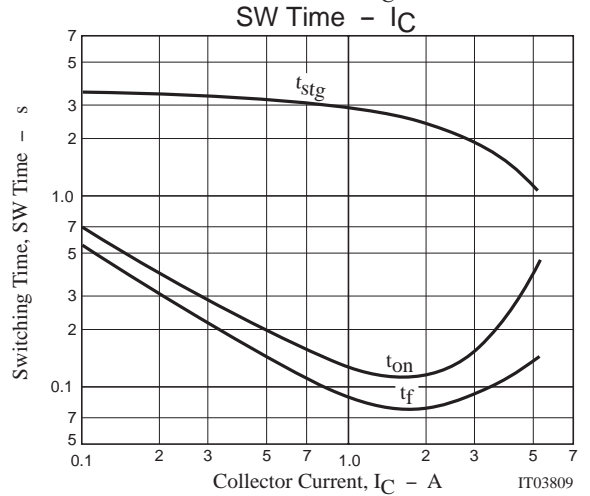
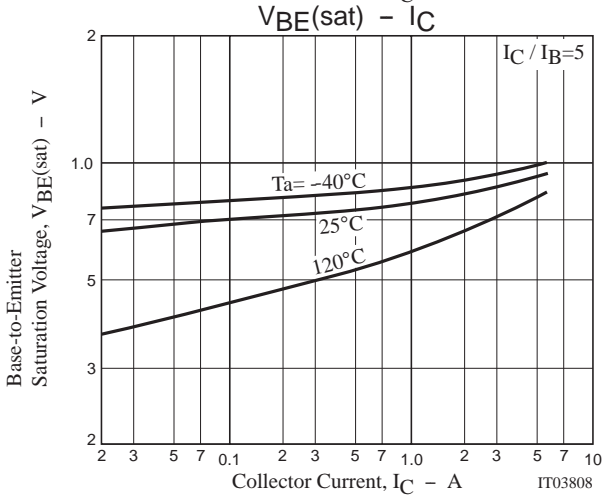
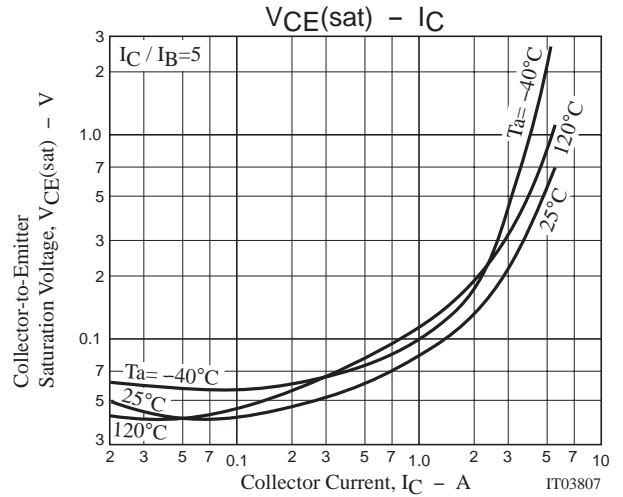
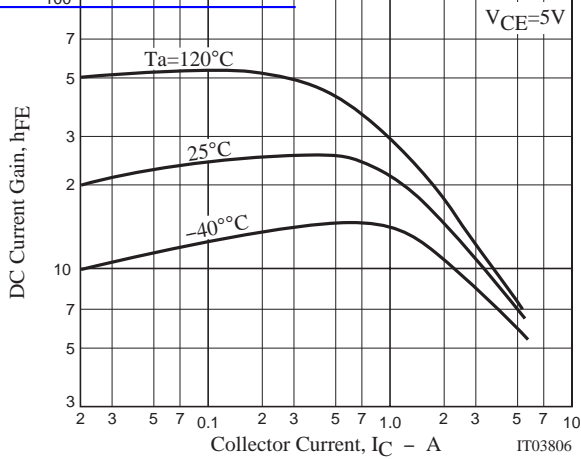


Switching Time Test Circuit



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